Dynamic Decisions Tools Catalog and Community of Practice: *Drupal-based Implementation*

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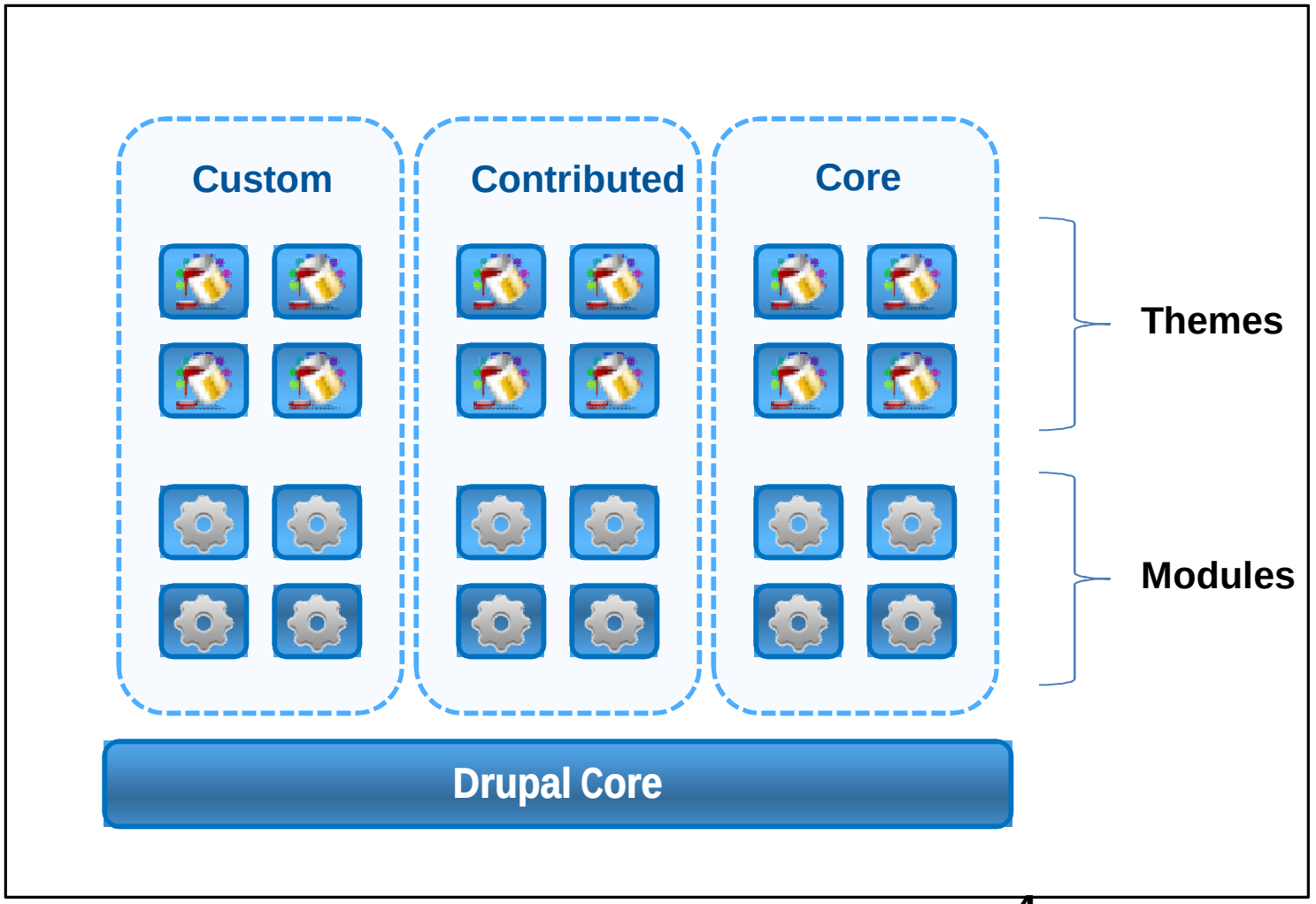
Outline

- Introduction to Drupal
- Implementation/configuration required (WAG)
- Synergistic activities within ESIP

Drupal

- A popular Web Content Management System (CMS), open source (GPL), ~10 years old (Dries Buytaert)
- Large user and developer community, thousands of contributed modules, science applications
- Modular and extensible
- Current versions: 6.22 (D6) and 7.10 (D7)
- Framework written in PHP, runs on major OS platforms

Drupal Framework



Core Features

- Content management
  - With admin user interface
  - Custom content types
  - Versioning
  - Taxonomy support
  - Search support
- Template & theme system
  - Separation of content from view*
  - Many faces, same content
- User management
  - User authentication and role-based authorization
  - Many extensions available, e.g., LDAP module

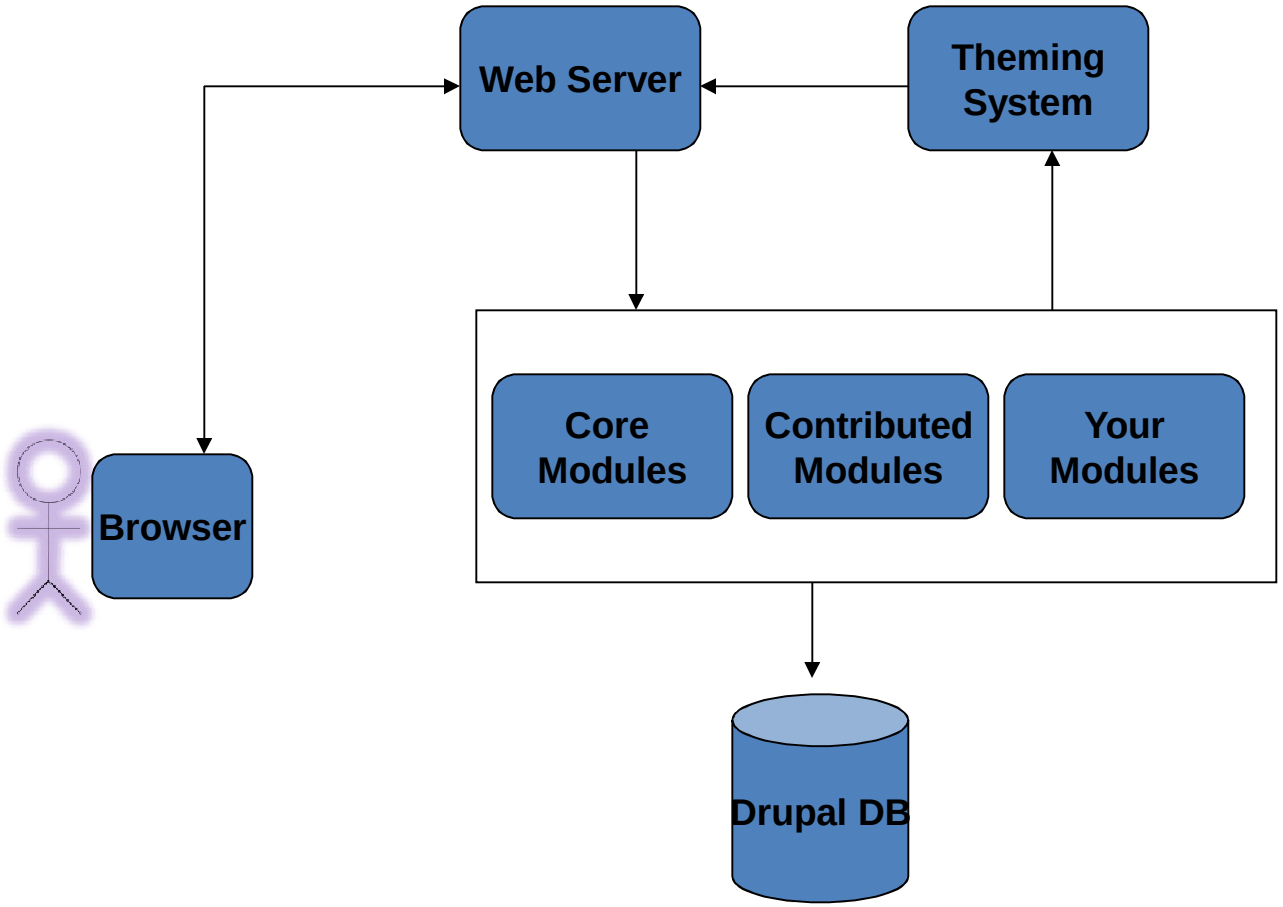
Drupal Concepts

- Administration Interface: build and administer a site
- Content is typed (string marker)
- Node: underline storage units for all types (“base class”)
- Comments: comments on a node, not nodes themselves
- Users and Roles
- Theme: assembles HTML, scripts to display content
- Block: information placed on a display location

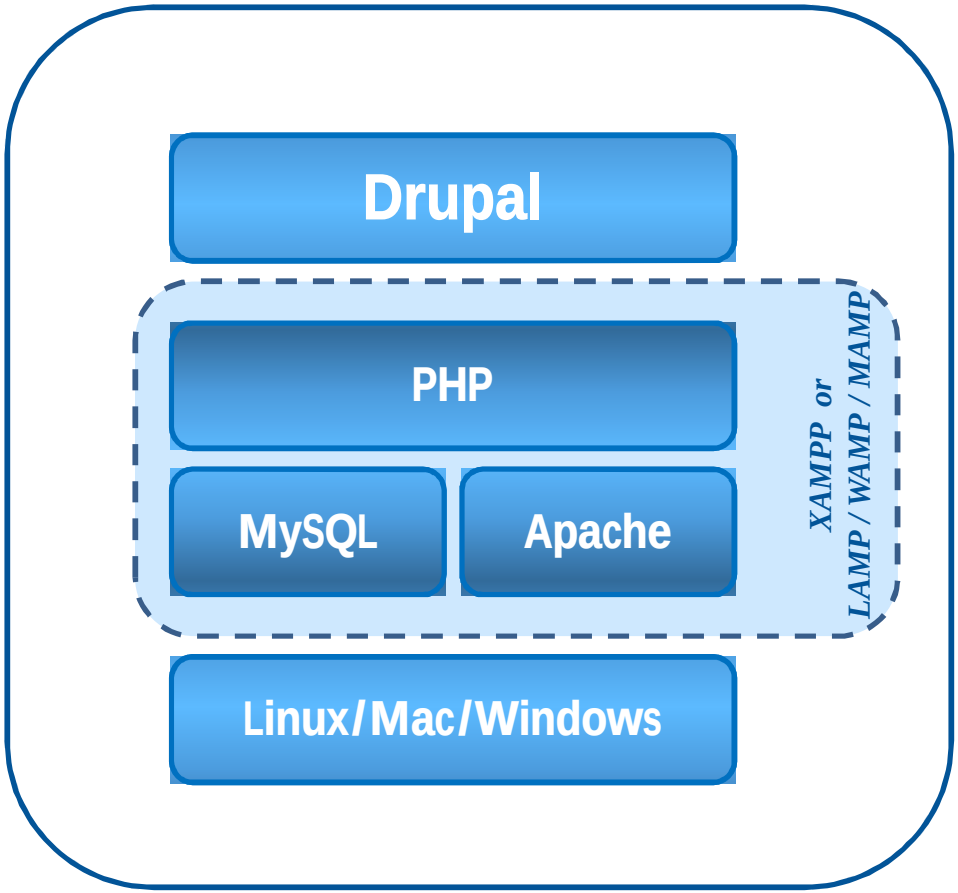
Drupal Concepts (cont.)

- Modules: building blocks of Drupal, provides functionality
- Hooks: Events API, or callback, modules implements certain hooks to provide functionalities
- Files: attachments to nodes (not stored in tables)
- Navigation system: a navigation block with menus, primary links, secondary links
- Views: a smart query builder that defines how content are extracted and presented

How It Works – Abstract View



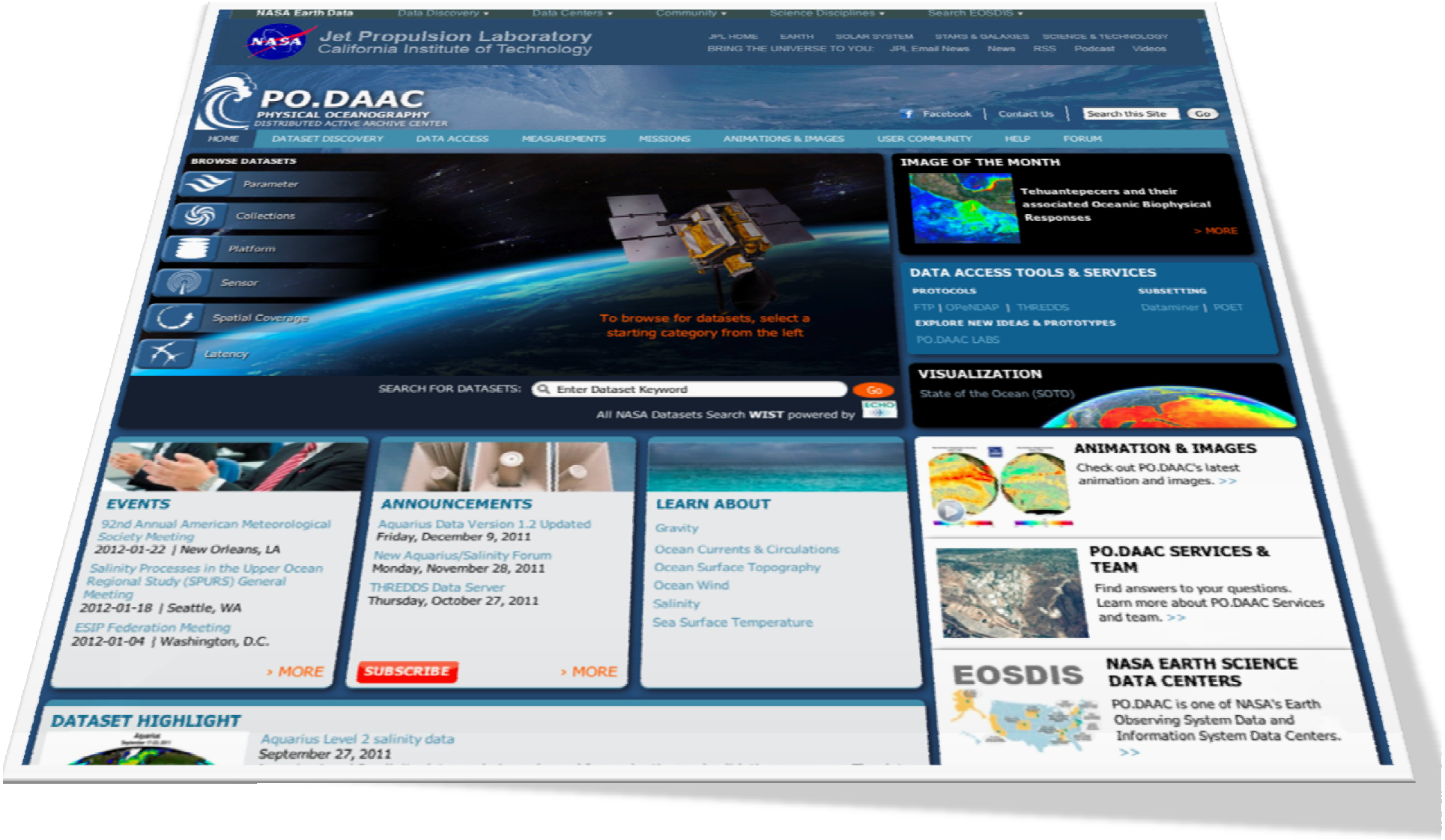
Software Stack



Using Drupal

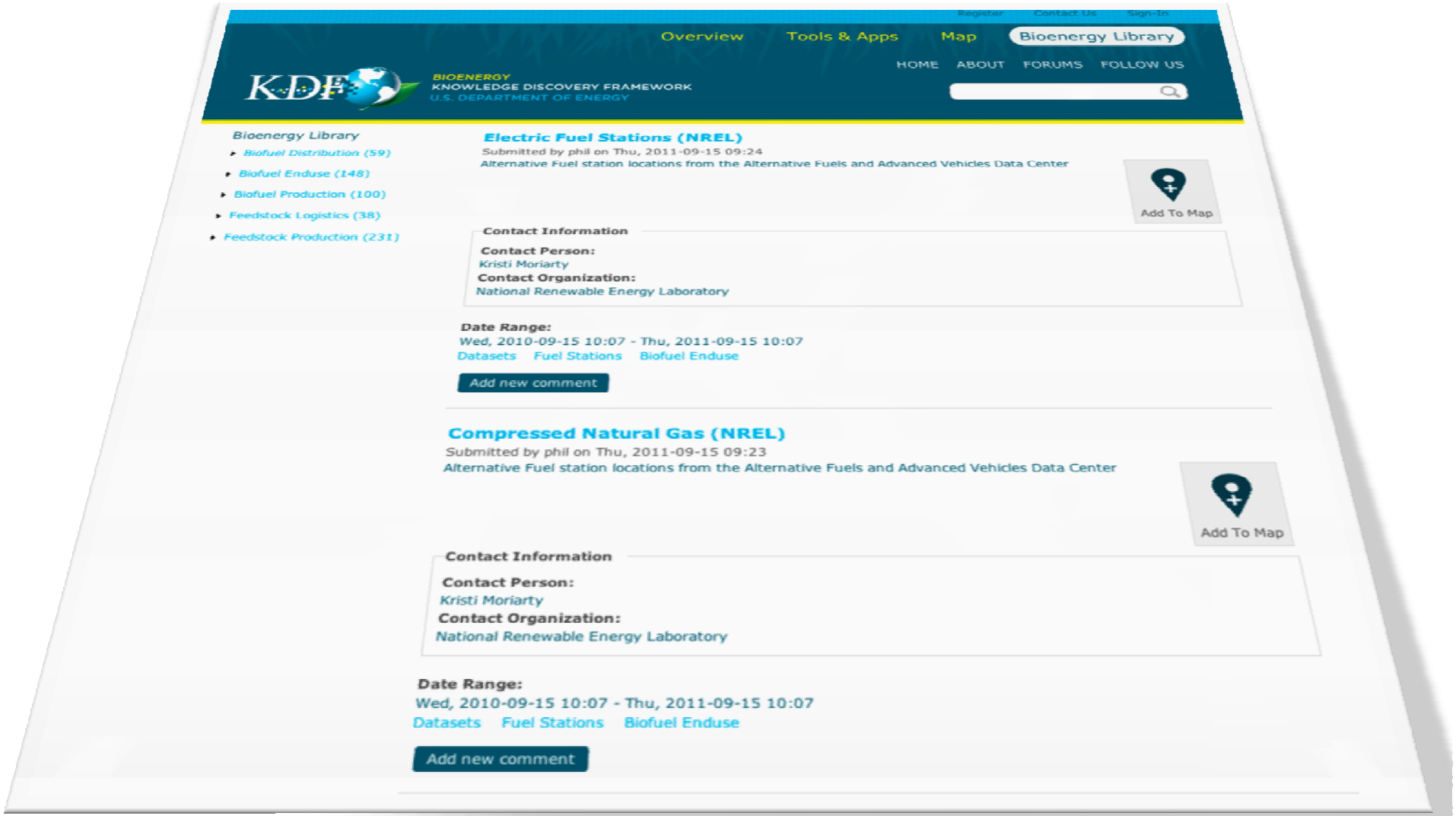
- Drupal can be used for most web site applications, including
  - Document/Data/Metadata management
  - Corporate web sites
  - Community websites (content portals)
  - Intranet applications
  - Personal web sites or blogs
  - Collaborative websites
  - News site
  - E-commerce applications
  - Resource directories
  - Social Networking sites
- Better suitable for more complex web sites, or sites flexible to evolve, see:
  - http://drupal.org/node/346217

NASA JPL DAAC

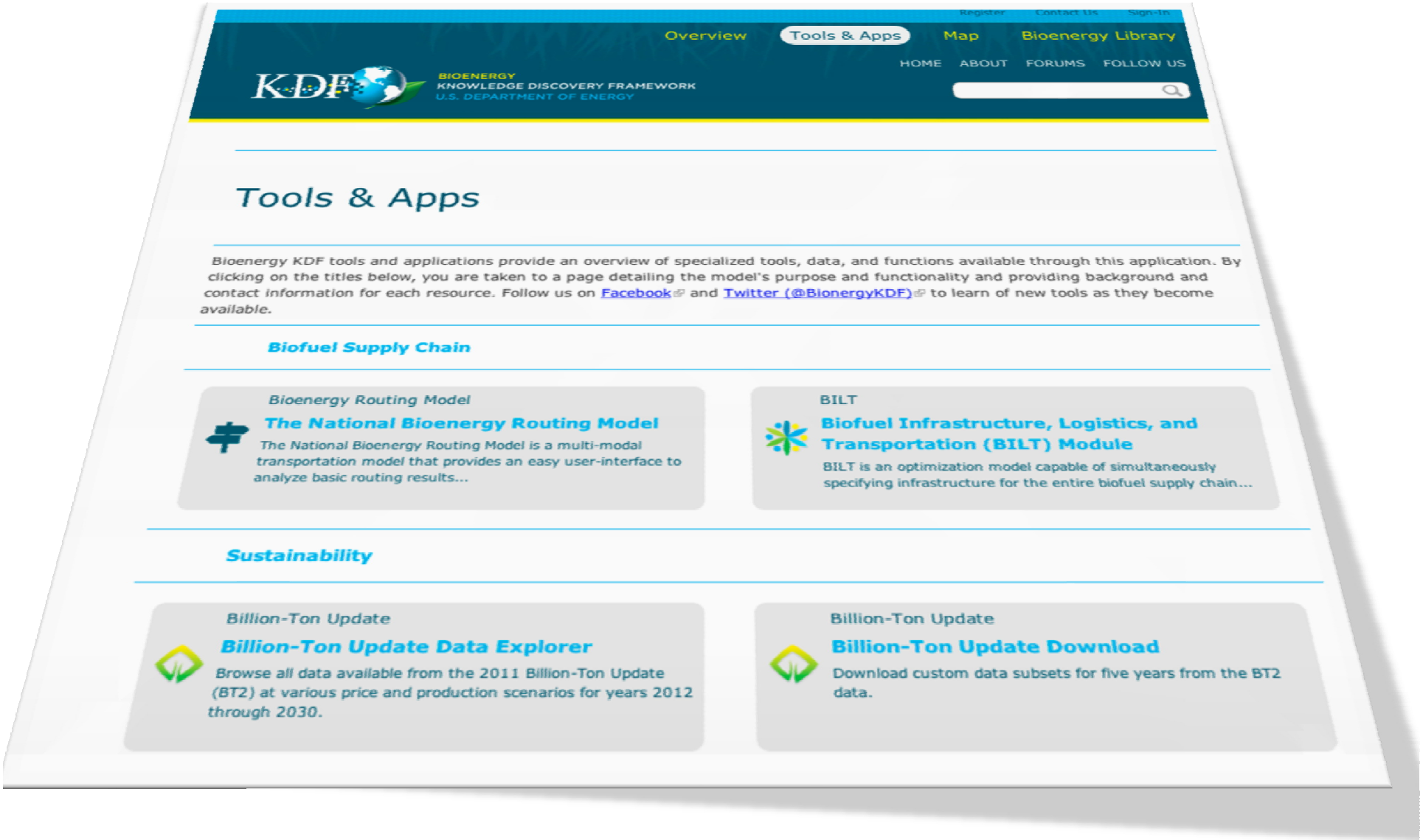


Bioenergy KDF (ORNL)

Bioenergy KDF (Data/Resource Catalog)



Bioenergy KDF (Tools Catalog)



Some Modules (D6)

- Content Construction Kid (CCK), View
- FAQ, Biblio, Forum, Blog, Poll
- Open ID, LDAP
- RDF, Biblio, OAI-PMH
- GMap, Nice Map, Open Layers, KML, Google Visualization API, Location
- Devel
- Your Modules ? (Research Notebook, Noesis, ..)

Drupal 7: What's New

- Usability enhancement (e.g., clear separation of admin views)
- Better security (e.g., password Sha-1 and salt)
- CCK - moved into the core
- RDF - moved into the core (http://drupal.org/node/1089804)
- Image processing - moved into the core
- API changes/addition for better (e.g., Image API, Render API and renderable arrays, field API)

Drawbacks

- Learning curve and training cost
  - Unique Drupal concepts, overwhelming features
  - Third-party training & service costs (true for any software!)
- Migration existing system into Drupal
  - Can be Complex
  - Unique challenges case by case
- Lack of control, particularly on the core system
- Major version upgrade (e.g. from 6.x to 7.x) may be tricky
- Watch out for too many modules: be careful introducing a new module, document its purpose

Catalog Implementation Requirements

- Define a content type (catalog entry)
  - Define fields describing the content type
    - Tool Authors
    - Data Used
    - Publications
  - Define fields describing how the tools have been used by others
    - Links to published papers
    - Ratings
    - Drawbacks
    - Advantages
- Utilize Drupal's Content Creation Kit (CCK) to configure a new content type

Social Curation Requirements

- Who can add an entry to the catalog?
- Who can additional “use” information?
- Who is allowed to rate?
- Anyone – like a wiki?
- Moderated access?
- Need to use Drupal’s User Roles/Permissions to configure
- Need to use Drupal’s Rules/Tokens to create publication workflow if an editorial board is needed

Leverage other ESIP activities

- Product and Services testbed
  - Led by Ken Keiser
  - Can potentially provide infrastructure to host a Drupal based catalog
  - Can potentially provide some seed funding for prototyping
- Science on Drupal Working Group
  - Led by Jerry Pan and Bruce Caron
  - Can provide Drupal expertise and a technical sounding board